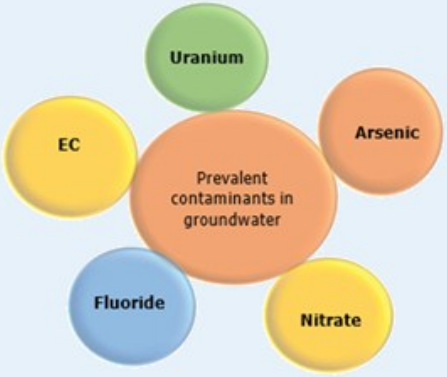
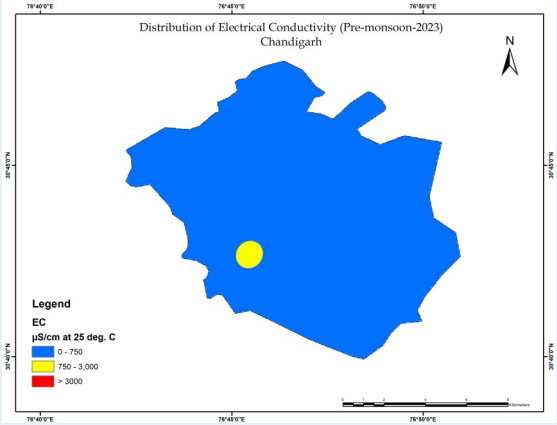
Groundwater Quality Scenario in Chandigarh

Parameters	No of samples	Permissible limit	No. of Samples above permissible limit	% Samples above permissible Limit
EC	8	3000 µS/cm	0	0
Fluoride	8	1.5 mg/L	0	0
Nitrate	8	45 mg/L	0	0
Arsenic	8	10 ppb	0	0
Uranium	8	30 ppb	0	0





Districts with anomalous values at sporadic locations

EC (3000 µS/cm)	Not Any
Fluoride (F > 1.5 mg/L)	Not Any
Nitrate (Nitrate > 45 mg/L)	Not Any
Arsenic (As> 10 ppb)	Not Any
Uranium (U > 30 ppb)	Not Any

For Further Information, Contact to :
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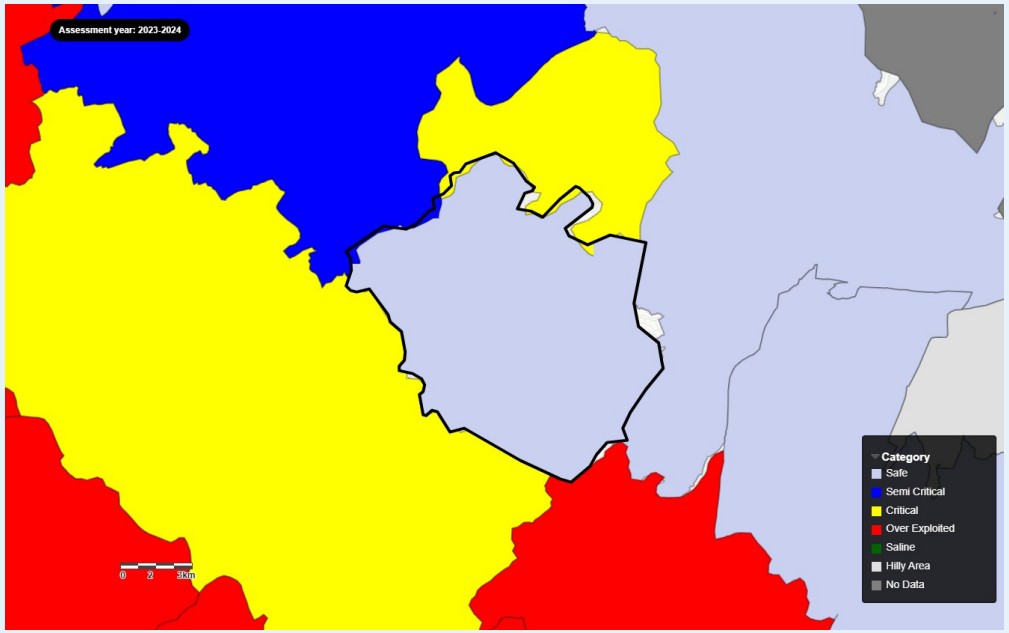
Central Ground Water Board
Department of Water Resources, RD & GR
Ministry of Jal Shakti, Government of India



Dynamic Ground Water Resources & Ground Water Quality of Chandigarh, 2024

December, 2024

Groundwater Resource Scenario in Chandigarh

- Ground Water Resources Assessment (GWRA)- jointly carried out by Central Ground Water Board and State Nodal/Ground Water Department periodically as per the Ground Water Resource Estimation Committee (GEC) methodology.
- Carried out under the guidance of the respective State/UT Level Committees (SLCs) and overall supervision of Central Level Expert Group (CLEG).
- As part of the assessment, 'Annual Extractable Ground Water Resource' as well as 'Annual Ground Water Extraction are assessed for each assessment unit (Block).
- The 'Stage of Ground Water Extraction' is computed as the ratio of 'Annual Ground Water Extraction' with respect to 'Annual Extractable Ground Water Resource' and is usually expressed in percentage. Based on the stage of extraction, the assessment units are categorized as Safe (<= 70 %), Semi-Critical (>70 % and <=90 %), Critical (>90 % and <=100%) and Over-Exploited (>100 %).
- GWRA-2024, 2023, 2022 and 2020 has been carried out through a software/web-based application "INDIA-GROUNDWATER RESOURCE ESTIMATION SYSTEM (IN-GRES)" developed by CGWB through IIT-Hyderabad.

Salient Features

1	Rainfall	1,078.00 mm
2	Hydrogeology	Quaternary alluvial deposits comprising layers of fine sand and clay. Ground water occurs under confined as well as semi -confined conditions.
3	Recharge Worthy Area of the State	11.4 Thousand Sq. Km
4	Assessment Unit (AU) Type / Number	UT / 1 Number
5	Average area of Assessment Unit	11400 Sq. Km

Findings

	Attribute	GWRA-2017	GWRA-2020	GWRA-2022	GWRA-2023	GWRA-2024
1	Total Annual Ground Water Recharge (in bcm)	0.04	0.06	0.05	0.05	0.06
2	Annual Extractable Ground Water Resources (in bcm)	0.04	0.06	0.05	0.05	0.05
3	Annual Ground Water Extraction (in bcm)	0.03	0.05	0.04	0.04	0.03
4	Stage of Ground Water Extraction (in %)	89	80.6	80.99	75.41	66.13

bcm: Biliion Cubic Meters

Categorization of Assessment Units based on the 'Stage of Ground Water Extraction

Sl. No	Category	GWRA-2017		GWRA-2020		GWRA-2022		GWRA-2023		GWRA-2024	
		Number of AUs	% of AUs	Number of AUs	% of AUs	Number of AUs	% of AUs	Number of AUs	% of AUs	Number of AUs	% of AUs
1	Safe									1	100
2	Semi-critical	1	100	1	100	1	100	1	100		
3	Critical										
4	Over-exploited										
5	Saline										
Total number of AUs		1		1		1		1		1	

Recommendations

* Chandigarh is underlain by the Quaternary alluvial deposits and comprises layers of fine sand and clay. Coarser sediments occur along the Sukhna Choe and Patialiki Rao, whereas relatively finer sediments underlie the area between these two streams. Fair to good aquifer horizons occur in most part of Chandigarh comprising medium to coarse sand, to a depth of 180 m bgl below which they become finer.
* Total Annual Ground Water Recharge has been assessed as 0.06 bcm and Annual Extractable Ground Water Resources as 0.05 bcm. The UT of Chandigarh has been categorized as 'Safe' with Total Extraction of 0.03 bcm and stage of ground water extraction at 66.13 %.
* Out of 114 sq km recharge worthy area of the UT, 100 % of the area is under 'Safe'. The entire 49.62 mcm annual extractable ground water resources of the UT, is under 'Safe' categories
* Adoption of Roof Top Rainwater Harvesting in feasible areas of Chandigarh for recharging the Ground water Reservoirs.
* National Aquifer Mapping & Management Programme (NAQUIM) Reports prepared by CGWB (https://cgwb.gov.in/cgwbpnm/) which are also being shared with State/District Authorities and Ground Water Year Book published by CGWB having water level & water quality data may be used in Ground water management (https://cgwb.gov.in/cgwbpnm/).
* Regulation & control of Ground water Extraction: Ministry of Jal Shakti has issued the guidelines for control and regulations of ground water extraction vide notification dated 24.09.2020 which has further been amended in March 2023. Concerned departments may ensure implementations of the guidelines.